TWI (Training Within Industry) Overview & (JI) Standard Work
AGENDA

• Intro to AMC
• History of Training Within Industry (TWI)
• Intro to TWI Job Relations (JR)
• Intro to TWI Job Method Improvement (JM)
• Intro to Job Instruction (JI)
• TWI and Standard Work
• Q&A
Albany Medical Center

Albany Medical Center, northeastern New York’s only academic health sciences center, is one of the largest private employers in the Capital Region. It incorporates the 734-bed Albany Medical Center Hospital, which offers the widest range of medical and surgical services in the region, and the Albany Medical College, which trains the next generation of doctors, scientists and other healthcare professionals, and also includes a biomedical research enterprise and the region’s largest physicians practice with more than 450 doctors. Albany Medical Center works with dozens of community partners to improve the region’s health and quality of life.
ALBANY MED LEAN HEALTHCARE
Dedicated to the Teaching and Practice of Lean Principles in Healthcare
AMC LEAN Belt Program

- Over 60 hours of LEAN & Innovation training
- Over 50 hours experiential
- 6 books
- Off site “Lean Visits”
- All 3 TWI classes
  - Job Instruction
  - Job Relations
  - Job Method Improvement
What is TWI?

TWI is a Leadership Development program designed to provide supervisors and team leaders with the ability to lead (JR), instruct (JI) and improve the methods (JM) of their jobs.
TWI: Five Basic Needs of a Supervisor (Team Leader)
United States enters WWII (1941)

Off went thousands of our skilled workforce
Problem

Who is going to manufacture to support the effort?
Women recruited to enter the workforce (manufacturing)
And enter they did…. 

Skills needed?
War Manpower Commission & TWI Service

- Developed for WWII starting in 1940. By Presidential order April 18, 1942 Training within Industry functions were made part of the War Manpower Commission.

- Mission: Support 11 million Soldiers to become the “Arsenal of Democracy”

- Trained over 1.7 Million people at 16,511 companies in the US alone.
The need to rapidly produce ships for the WW I meant an urgent requirement to train workers for the ship building industry.

The Defense department initiated a training program to increase the number of shipyard workers to 10 times the current number.

They engaged Charles R. Allen, a vocational instructor from Massachusetts, to run the training program.

Allen’s 4-step system for training new workers – Show, Tell, Do, Check – and his method for breaking down a job into a series of steps for training was documented in his 1919 book “The Instructor, The Man and The Job”.

The 4-step method clearly formed the basis for the TWI programs developed over 20 years later as the US entered WWII.
Impact of TWI on War Effort

Of the 600 client companies monitored by the TWI Service throughout the war:

- 86% increased production by at least 25%
- 100% reduced training time by 25% or more
- 88% reduced labor-hours by over 25%
- 55% reduced scrap by at least 25%
- 100% reduced grievances by more than 25%
Industry Abandoned TWI in 1945

• Millions of people returned to their jobs after leaving the military displacing TWI trained people.

• Viewed TWI as being a “war program”.

• US infrastructure was not damaged enabling manufacturers to quickly produce consumer goods.
How TWI Ended up in Japan

- US Occupational Government introduced TWI along with quality methods (Deming and Juran) in Japan (late 40’s)

- Japanese industry, eager to learn from the industrial base that had defeated them, quickly made TWI a staple of their industrial training keeping the training alive to this day.

- Toyota embraced TWI in 1951 to train their people in the evolving Toyota Production System where JI remains as a cornerstone of their team leader training and standard work.
TWI and Toyota

Toyota adopted TWI in the early 50’s
They still use it today, almost unchanged
One of the foundations of TPS, or Lean Manufacturing
The 3 TWI programs work together like a three-legged stool

- JI – Standard Work
- JR – Respect for People
- JM – Continuously Improve

How many people have received any Supervisory training?
The TWI Cycle

• Build strong relationships with people (JR)
  – so that…

• People will follow our good instruction (JI)
  – so that…

• We create standard work and build a strong foundation for continuous improvement (JM)
  – so that…

• We can coach people to think for themselves… and be creative
Why Job Relations?

This is the way I’ve always done it!
Job Relations Training (JR)

Trains supervisors/team leaders on how to evaluate and take proper actions to solve and to prevent problems with people.
A Supervisor Gets Results Through People
Foundations for Good Relations

• Let Each Worker Know How He or She is Getting Along

• Give Credit When Credit is Due

• Tell People in Advance About Changes that will Affect Them

• Make Best Use of Each Person's Ability

Respect for People
How to Handle a Problem

**DEFINE YOUR OBJECTIVE**

Step 1 - Get The Facts
Get opinions & feelings

Step 2 - Weigh And Decide
What possible actions are there?

Step 3 - Take Action
Don’t pass the buck

Step 4 - Check Results
Did your action help production?

**DID YOU ACCOMPLISH YOUR OBJECTIVE?**

[www.TWI-Institute.org](http://www.TWI-Institute.org)
Job Methods Training (JM)

Trains supervisors/team leaders on how to analyze jobs to make the best use of the people, machines, and materials now available.
How to Improve Methods

Step 1 — BREAK DOWN THE JOB
List all details as done in the Current Method

Step 2 — QUESTION EVERY DETAIL

Step 3 — DEVELOP THE NEW METHOD
Eliminate, Combine, Rearrange, Simplify

Step 4 — APPLY THE NEW METHOD
Use it until a better way is developed

www.TWI-Institute.org
## JM Job Breakdown

### Job Methods Breakdown Sheet

<table>
<thead>
<tr>
<th>Detail #</th>
<th>PRESENT/PROPOSED METHOD DETAILS</th>
<th>REMARKS</th>
<th>IDEAS</th>
<th>IDEAS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>TIME/TOLERANCE/REJECTS/SAFETY</td>
<td>WHY</td>
<td>WHERE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>WRITE THEM DOWN, DON'T TRY TO REMEMBER.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Eliminate**
- **Combine**
- **Rearrange**
- **Simplify**
## Recent JM Example

### Job Methods Breakdown Sheet

**PRODUCT:** Steps for new hire: ASA VI

**OPERATIONS:** Data Entry, faxing

<table>
<thead>
<tr>
<th>Detail</th>
<th>Method Details</th>
<th>Present/Proposed Method Details</th>
<th>Time/Tolerance/Rejects/Safety</th>
<th>Remarks</th>
<th>Ideas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Start data selected, advise hiree to go to EHS/Security</td>
<td>2 mins</td>
<td></td>
<td></td>
<td>Required detail</td>
</tr>
<tr>
<td>2</td>
<td>Candidate goes to EHS and Security</td>
<td>180 mins</td>
<td></td>
<td></td>
<td>Waiting time for future details could be sped up if spot date given by EHS was sooner to New Hire phone call</td>
</tr>
<tr>
<td>3</td>
<td>Address faxed Praxi site to get training forms</td>
<td>1 min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Complete form for selected training needs</td>
<td>2 mins</td>
<td></td>
<td></td>
<td>Must be a better way combined with insurance card</td>
</tr>
<tr>
<td>5</td>
<td>Email form to training group</td>
<td>1 min</td>
<td></td>
<td></td>
<td>Could be eliminated when tasks combined</td>
</tr>
<tr>
<td>6</td>
<td>Print form for reference</td>
<td>1 min</td>
<td></td>
<td></td>
<td>Mark down on check list instead of wasting paper</td>
</tr>
<tr>
<td>7</td>
<td>Wait for clearance from EHS and Security</td>
<td>3 mins</td>
<td></td>
<td></td>
<td>We should have just one place to sign up new hires for all access and training needed</td>
</tr>
<tr>
<td>8</td>
<td>Look for develop in SART tool to request access to Ahwanee Signature, Business Phones, Outlook, Share Drive, etc. MB35</td>
<td>2 mins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Wait for SART completion</td>
<td>7-10 days</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Assure business days, email help desk for resolution</td>
<td>2 mins</td>
<td></td>
<td></td>
<td>Not needed frequent responses</td>
</tr>
<tr>
<td>11</td>
<td>System access complete and maintained on email</td>
<td>1 min</td>
<td></td>
<td></td>
<td>Required access</td>
</tr>
<tr>
<td>12</td>
<td>Email Ahwai to request SART account, taskview access, and Charge/Customer access</td>
<td>1 min</td>
<td></td>
<td></td>
<td>This could be combined in the SART tool required</td>
</tr>
<tr>
<td>13</td>
<td>Add Active Task of email</td>
<td>1 min</td>
<td></td>
<td></td>
<td>This could be completed in the SART tool request</td>
</tr>
<tr>
<td>14</td>
<td>Click on Tools Team Lead</td>
<td>1 min</td>
<td></td>
<td></td>
<td>This could be completed in the SART tool request</td>
</tr>
<tr>
<td>15</td>
<td>Click on New Employee Form</td>
<td>1 min</td>
<td></td>
<td></td>
<td>This could be completed in the SART tool request</td>
</tr>
<tr>
<td>16</td>
<td>Click on SIGNATURE, User ID, and Complete User Form</td>
<td>1 min</td>
<td></td>
<td></td>
<td>This could be completed in the SART tool request</td>
</tr>
<tr>
<td>17</td>
<td>Complete Form (User name, DOB, etc.)</td>
<td>1 min</td>
<td></td>
<td></td>
<td>This could be completed in the SART tool request</td>
</tr>
</tbody>
</table>

**IDEAS:** Write them down, don't try to remember.

**DATE:** 10/13/2015
Job Instruction Training (JI)

How to teach people to quickly learn to do a job correctly, safely, and conscientiously.

**How to Instruct**

1. **Prepare the worker**
   - Put the person at ease
   - State the job
   - Find out what the person already knows
   - Get the person interested in learning the job
   - Have the person in the correct position

2. **Present the operation**
   - Tell, show and illustrate the important step at a time
   - Don’t stress key points
   - Don’t repeat what you have done for key points
   - Don’t overload the person with too much information
   - Don’t give them more information than they can manage at one time

3. **Try-out performance**
   - Have the person do the job correctly
   - Have the person explain each important step
   - Have them show you how they would proceed
   - Have the person explain reasons for key points
   - Have them explain key points
   - Have the person do the job again
   - Have the person do the job in a different way
   - Have the person describe what happened

4. **Follow-up**
   - Put the person in charge
   - Directives given to the person go to for help
   - Check on the person frequently
   - Encourage questions
   - Taper off training without giving false follow-up

**Job Instruction Healthcare**

1. **How to get ready to instruct**
   - Before instructing people how to do a job:
     - Who to train
     - For which work
     - By what date

2. **Break down the job**
   - List important steps
   - State Key Points
   - Safety factors are always Key Points

3. **Get everything ready**
   - The proper equipment, supplies, materials and whatever needed to aid instruction

4. **Arrange the workplace**
   - Neatly, in a orderly working condition

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Not Inconsequential

Poor training blamed for Terminal 5 disaster

Laura Chubb 31 Mar 2008 0 comments

Failure to implement proper staff training at Heathrow’s Terminal 5 is emerging as a key factor in the terminal’s continuing difficulties, as a further 54 out of 394 flights were cancelled on Monday.

Almost 250 flights were cancelled in the terminal’s first four days because of problems with the new baggage handling system. Employees have since revealed they were not properly trained in how to operate the IT and baggage handling systems, resulting in a backlog of around 15,000 bags at the beginning of this week.

Simon Moore, an IT expert who has advised Microsoft and the Conservative party, said: “We speak all the time about people, processes and technology, but people are steadily being eliminated from the equation and a large organisation can’t do away with them altogether.”

Trade union GMB urged disgruntled passengers to vent their frustrations on staff, praising the professionalism of British Airways (BA) employees working in chaotic conditions.

Paul Kenny, GMB’s general secretary, said: “These staff are doing their very best to cope with what looks like technical difficulties. BA staff are professional and do a fantastic job week in and week out to provide a first class service to millions of passengers.”

He added: “These staff did not come to work to be abused. It will not help for passengers to abuse them and will add to their demoralisation and lead to further problems.”

Paul Smith, aviation group secretary with the Public and Commercial Services Union (PCS), said unions had been requesting talks with BA and BAA managers well in advance of the terminal’s opening last Thursday. He said they had wanted to better understand working practices and work out contingency plans, but received little in reply. “There was an unwillingness to engage with us,” Smith added.

Further flight cancellations are expected on Tuesday.
“If the worker hasn’t learned, the instructor hasn’t taught”
You have the SOP…..
We gave you the instructions…
We are now doing it this way!
Why do we need a standardized training process?
PROBLEM: Telling Alone
Problem: Showing alone
JI How to Get Ready to Instruct

1 — MAKE A TIMETABLE TO INSTRUCT
   Who to train, For which work, By what date...

2 — BREAK DOWN THE JOB
   List Important Steps
   Select Key Points
   Safety factors are always Key Points

3 — GET EVERYTHING READY

4 — ARRANGE THE WORKSITE
JI 4-Step Method

Step 1 — PREPARE THE WORKER
Get the person interested in learning the job

Step 2 — PRESENT THE OPERATION
Don’t give them more information than they can master at one time

Step 3 — TRY-OUT PERFORMANCE
Make sure the person understands

Step 4 — FOLLOW UP
Check on the person frequently/Encourage questions

"If the worker hasn’t learned the instructor hasn’t taught."
Quickly training employees to do a job correctly, safely, and conscientiously
Sustain Improvements

OR 2 Year Changeover Trends

Project Begins at 53 Minutes with added Safety time
Why Standardize?
Why Standardize?

To standardize a method is to choose out of many methods the best one, and use it. ..What is the best way to do a thing? It is the sum of all the good ways we have discovered up to the present. It, therefore becomes the standard.

Henry Ford 1926
Standard work here?
Standard Instruction, Standard Processes

Photo of Job Instruction Demonstration in May 1943
www.SME.org

Albany Med 2015
“Most companies have focused too heavily on tools...without understanding lean as an entire system that must permeate an organization’s culture.”

*The Toyota Way, Jeffrey K. Liker*
Training Within Industry…

Variability Causing Unstable Performance

Reduce Variability With Standard Work

Improve Performance From Stable Baseline

Job Instruction
- Develop Standard
- Train Each Person

Job Methods
- Question Every Detail
- Improve Standard

Job Relations
- Encourage Innovation
- Solve People Problems
Impact of Tactical Lean

Output

Event #1
Current Method

Event #2
Maintenance

Event #3
What Standard should be

Things tend to go back to where they were before the change when people are not trained to standard.

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TWI Training Structure

• 5 days – 2 hours per day

• 8 – 10 Participants

• Each Participant Demonstrates “Learn by Doing”
TWI - 4 STEP METHOD

<table>
<thead>
<tr>
<th>Charles Allen 4-Step Learning Process</th>
<th>TWI</th>
<th>PDCA Cycle</th>
<th>Scientific Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation</td>
<td>Job Instruction</td>
<td>Job Methods</td>
<td>Job Relations</td>
</tr>
<tr>
<td>Prepare the Worker</td>
<td>Prepare the Worker</td>
<td>Breakdown the Job</td>
<td>Get the Facts</td>
</tr>
<tr>
<td>Presentation</td>
<td>Present the Operation</td>
<td>Question Every Detail</td>
<td>Weigh &amp; Decide</td>
</tr>
<tr>
<td>Application</td>
<td>Try Out Performance</td>
<td>Develop New Method</td>
<td>Take Action</td>
</tr>
<tr>
<td>Testing</td>
<td>Follow Up</td>
<td>Apply New Method</td>
<td>Check Results</td>
</tr>
</tbody>
</table>

**Employment & Description**
- **Plan**: Observe data and reality; decide on a problem; define it.
- **Check**: Try the countermeasure; check the results.
- **Act**: If successful, standardize change; if not, start the cycle over.
- **Do**: Analyze the problem; propose a countermeasure.
- **Test the Predictions by Experiments**

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Resources

The TWI Workbook: Essential Skills for Supervisors
Productivity Press, Shingo Prize 2007
Patrick Graupp and Robert J. Wrona

Implementing TWI: Creating and Managing a Skills Based Culture
CRC Press, October 2010
Patrick Graupp and Robert J. Wrona

The Roots of Lean
Lean Frontiers, 2014
Jim Huntzinger

Getting to Standard Work in Healthcare
CRC Press, October 2012
Patrick Graupp and Martha Purrier
What is Engagement?
Questions?

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